



US009409417B2

(12) **United States Patent**
Soda et al.

(10) **Patent No.:** **US 9,409,417 B2**
(45) **Date of Patent:** **Aug. 9, 2016**

(54) **CONVEYOR DEVICE AND INKJET
RECORDING APPARATUS**

(56) **References Cited**

U.S. PATENT DOCUMENTS

- (71) Applicant: **KYOCERA Document Solutions Inc.**,
Osaka (JP)
- (72) Inventors: **Tomohisa Soda**, Osaka (JP); **Takeshi
Watanabe**, Osaka (JP); **Hidenori
Takenaka**, Osaka (JP); **Junpei Hobo**,
Osaka (JP); **Masami Fujihara**, Osaka
(JP)
- (73) Assignee: **KYOCERA Document Solutions Inc.**,
Osaka (JP)
- (*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

7,093,933 B2	8/2006	Tsuji et al.	
2004/0169711 A1	9/2004	Tsuji et al.	
2007/0291096 A1 *	12/2007	Toyoshima	B41J 11/0025
			347/104
2009/0251521 A1 *	10/2009	Arai	B41J 3/28
			347/104
2011/0242220 A1 *	10/2011	Yamagishi	B41J 11/0085
			347/47
2011/0293346 A1 *	12/2011	Sato	B41J 11/0085
			400/578
2012/0050398 A1 *	3/2012	Yamagishi	B41J 11/007
			347/30
2012/0056925 A1 *	3/2012	Yamagishi	B41J 2/155
			347/14
2012/0069085 A1 *	3/2012	Yamagishi	B41J 2/1714
			347/30

FOREIGN PATENT DOCUMENTS

JP 2004-216653 A 8/2004

* cited by examiner

Primary Examiner — Matthew Luu

Assistant Examiner — Patrick King

(74) *Attorney, Agent, or Firm* — Studebaker & Brackett PC

(57) **ABSTRACT**

A conveyor device includes a guide member with through holes therein. The guide member has a surface with grooves therein. The through holes are located inside of the grooves. The through holes include a first through hole and a second through hole. The first through hole is located opposite to an ejection region of a recording head. The second through hole is located opposite to a non-ejection region of the recording head. The grooves include a first groove and a second groove. The first through hole is located inside of the first groove. The second through hole is located inside of the second groove. The second groove is longer than the first groove.

7 Claims, 21 Drawing Sheets

(21) Appl. No.: **14/674,733**

(22) Filed: **Mar. 31, 2015**

(65) **Prior Publication Data**

US 2015/0273877 A1 Oct. 1, 2015

(30) **Foreign Application Priority Data**

Apr. 1, 2014 (JP) 2014-075588

(51) **Int. Cl.**
B41J 11/00 (2006.01)

(52) **U.S. Cl.**
CPC **B41J 11/007** (2013.01); **B41J 11/005**
(2013.01); **B41J 11/0085** (2013.01)

(58) **Field of Classification Search**
CPC .. B41J 11/007; B41J 11/0085; B41J 11/0045;
B41J 11/005; B41J 2/245; B41J 2/155;
B41J 2/515; B41J 11/20; B41J 11/06
USPC 347/101, 104
See application file for complete search history.

